POLAR STAR VISUAL THINKING

Visual Thinking for Assessment

One way to increase creativity, engagement and consolidation of content is to synthesize the learning acquired using artistic expression.

Our Visual thinking assessment tool is designed to achieve just that by encompassing **three approaches**:

Free expression

Free expression and deploying multiple means of expression is key to develop students' skills, competences and talents.

Invite your students το use small pieces of paper (e.g. a hexagon tile) to capture the concepts they learn. The point is to use a paper tile to communicate the concept learned in any way the like. They can draw, doodle, make a poem or a piece of music, use images, QR codes or quotes and anything else they want. They can express themselves however they like and highlight whichever aspect of the concept they want. For example, their capture can be something about the concept that impressed them (an interesting use for example or a historic event), about a contemporary global problem they feel worried about, a related natural phenomenon or the history behind the science or a related scientist.

Assessment value

Giving students the freedom to express themselves in this way will help you get insight as to what is the 'take home' message for them. Their interests, possible misconceptions and/or talents may also emerge.

Personal Geography

Personal Geography is an artistic expression of one's thoughts, feelings, dreams, fears, opinions, etc. It is a map into one's mind and can express a journey or a moment in time. Personal geography can be used in the science class to help students discover the value of what they learn through an artistic expression while it promotes a self-reflection and a deeper realization of the impact of each learning experience.

Invite your students to use the tiles they have made to capture concepts and place them together in a way that has meaning to them. They can place the tiles based on the connections those concepts have to create their own map of knowledge. They can add additional elements to their maps if they want to, to better link or describe the connection between the tiles.

Assessment value

Having students use multiple tiles to make knowledge maps will give you the opportunity to see how concepts connect according to students' understanding and which are the most prominent characteristics according to them.

Story Telling

Children have an innate love of stories. Stories create magic and a sense of wonder at the world. They teach us about life, about ourselves and about others.

Students can use story telling and through their imagination and creativity understand how science concepts are interweaved and together to tell the story of our world.

Encourage your students to use and combine their tiles to:

- to describe a phenomenon
- tell a story related to the concepts at hand
- design projects they'd like to do

Assessment value

Stories can help you understand how students:

- *Increase their willingness to communicate thoughts and feelings*
- *Increase verbal proficiency*
- *use their imagination and creativity*
- *Increase their knowledge retention by using concepts in different contexts.*

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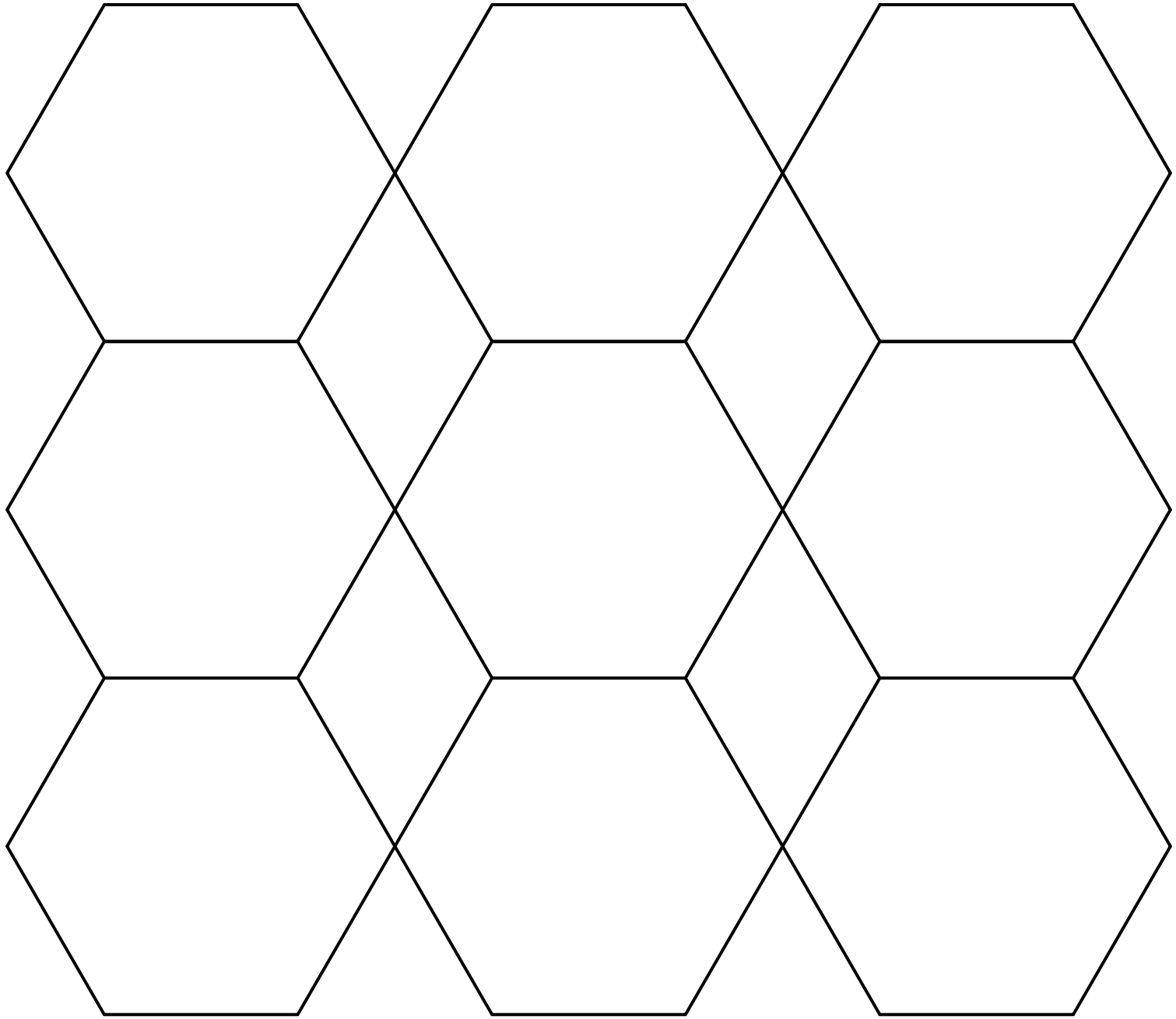
Visual thinking can be used in combination with the ‘Science as a whole’ strand of our methodology and more particularly with the knowledge map activity.

You can use this assessment activity in different ways:

- Individual: Encourage students to make their own creative map of knowledge.
- Group: Encourage students to do this activity as a group, each one selecting a key idea and linking them together to form an overall panel.

Assessment criteria you can consider:

- Correctly establishes relationships between concepts.
- Demonstrates a high level of detail in the artistic expression of their ideas.
- The expression of ideas is done without misconceptions.
- The selection of key ideas is relevant.
- Uses different visual techniques in artistic expression.



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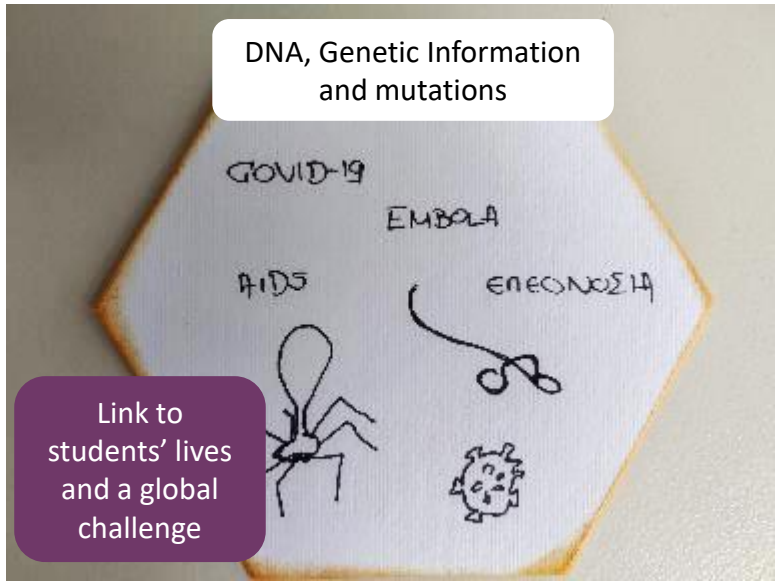
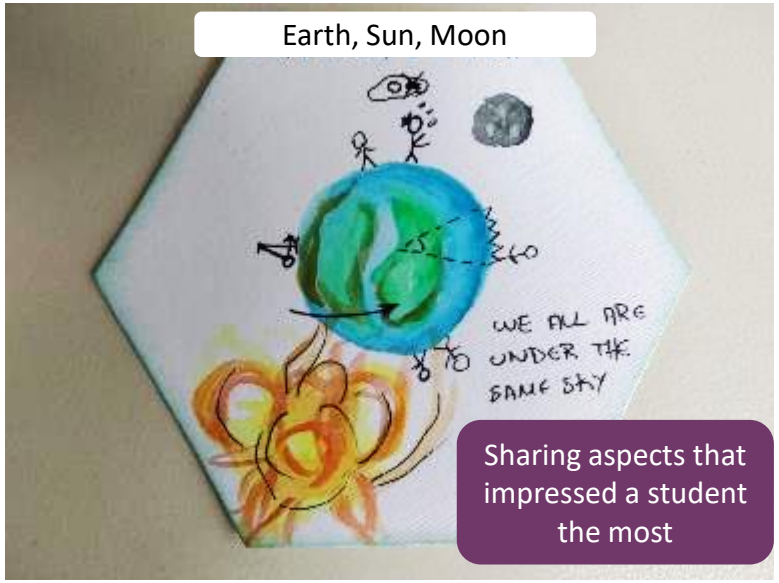
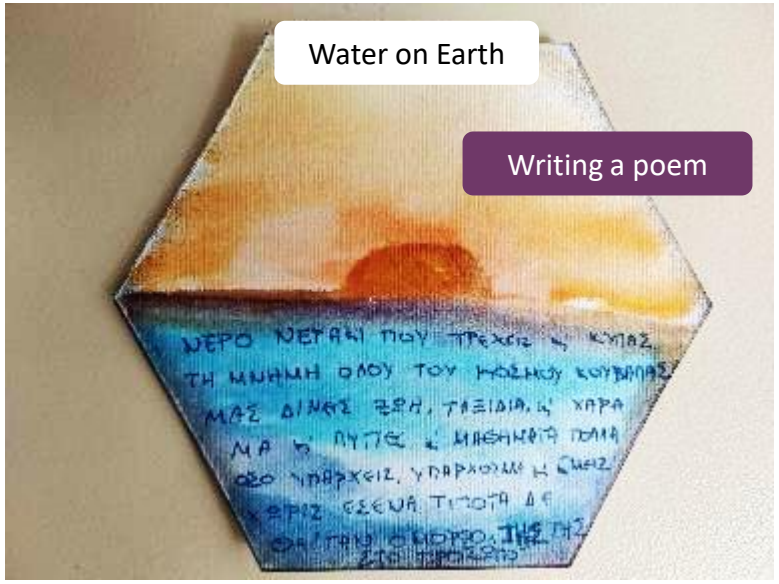
Visual Thinking for Assessment **Individual activity EXAMPLE - Free expression**







Visual Thinking for Assessment **Individual activity EXAMPLE - Personal Geography and Story telling**

Visual Thinking for Assessment

Personal Geography

"I've placed 'Water on Earth' in the heart of my map as it is the source of all life. It is everywhere in nature and plays a pivotal role in countless processes on Earth, from Tides to the function of organisms.

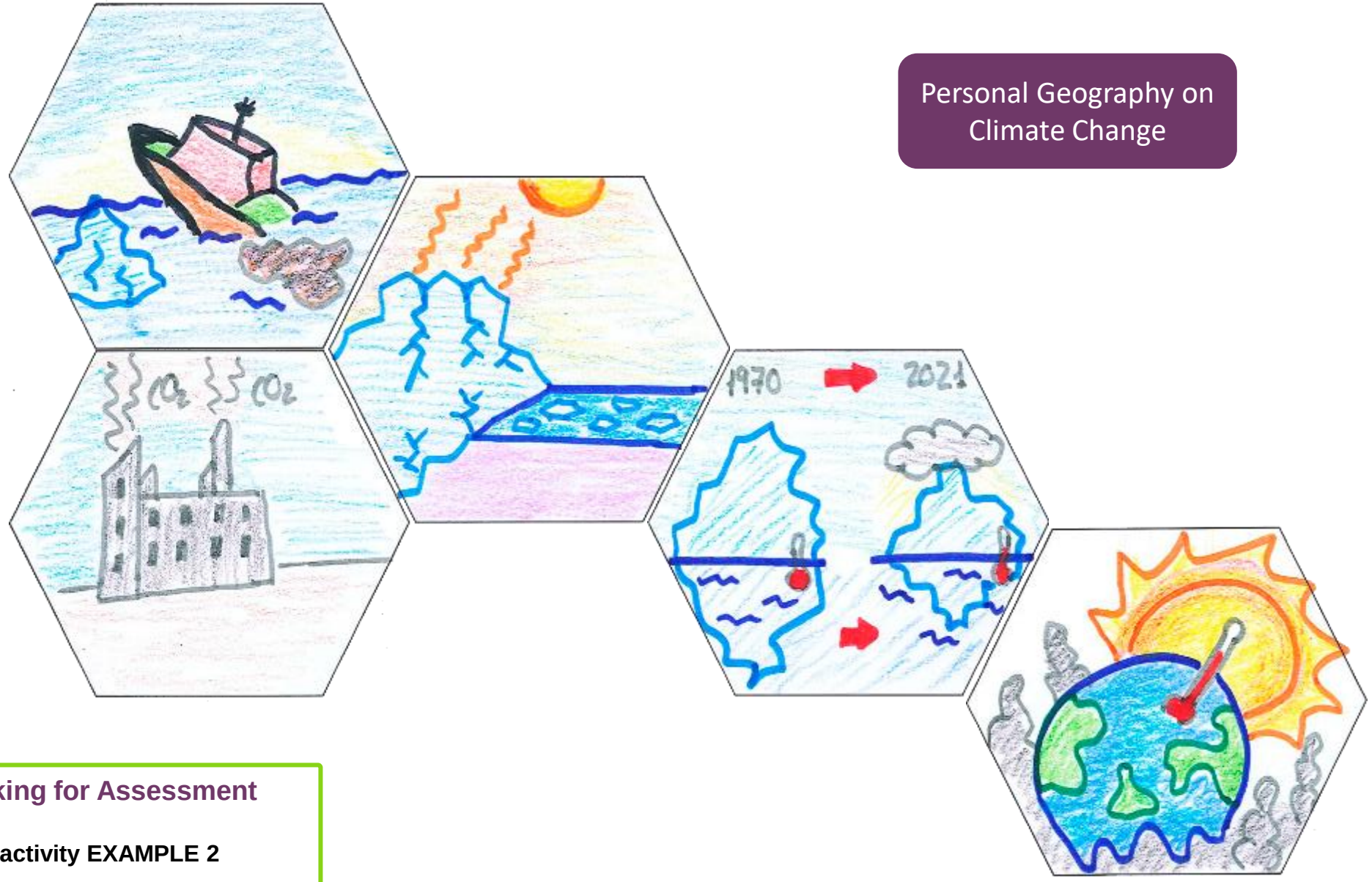
Tides and moving water can be a source of clean energy to help us counter the exploitation of fossils.

Water rich in elements is in our cells and the key ingredient of life. At the same time however, more than 884 million people do not access to clean water to drink which makes them suffer from multiple diseases."

Story telling

"I'd like tell a story about a water droplet. The droplet makes a journey around the planet. The journey begins when the droplet falls from the sky in the form of rain, it travels around the world through streams and ocean currents, going through hydraulic power plans and then moving on become part of solution in a lab that becomes a malaria vaccine. The droplet is inserted through the vaccine to a human and travels in the cells where it observes the wonders of cell functions. The journey ends back where it started with the droplet travelling back to the clouds only to set off to a new journey."

Personal Geography on Climate Change



Visual Thinking for Assessment

Individual activity EXAMPLE 2